

REMARKS

Applicants have amended claim 1 and added new claim 73. No new matter has been added. Claims 1-73 are pending. Applicants respectfully request prompt reconsideration and allowance of the application.

Claim Rejections Under 35 U.S.C. § 102(e)

Claims 1-5, 11-15, 22-25, 27-31, 38-40, 43-45, 48-50, 52-55, 58-60, and 63 were rejected under 35 U.S.C. § 102(e) based on U.S. Patent No. 6,391,209 to Belongia et al. ("Belongia").

Applicants respectfully request the Examiner to withdraw the claim rejection based on Belongia.

Regarding claims 1 and 53, Applicants respectfully submit that the rejection should be withdrawn because Belongia does not teach or suggest the system and method as claimed. In particular, Belongia does not teach or suggest a system including, among other subject matter, at least one of a first processing vessel and a second processing vessel "configured to remove at least a portion of the at least one byproduct from the used plating substance," as recited in amended claim 1. Belongia also lacks disclosure or suggestion of a method that includes "removing at least a portion of the at least one byproduct from the used plating substance in at least one of the first and second processing vessels," as recited in claim 53.

The Office Action cites reference numerals 1 and 4 of Belongia for the asserted disclosure of the first and second processing vessels, respectively. Further, the Office Action cites the Abstract and col. 6, lines 9-41 of Belongia for the asserted disclosure of removing at least a portion of at least one byproduct from a plating substance.

Focusing first on amended claim 1, Applicants respectfully submit that the rejection of that claim should be withdrawn because the plating reservoir 1 and plating tool 4 do not correspond with the first and second processing vessels recited in claim 1. For example, Belongia lacks any teaching of the plating reservoir 1 and/or plating tool 4 being configured to remove at least a portion of at least one byproduct from used plating substance. Instead, Belongia discloses that the plating reservoir 1 and plating tool 4 are part of a “conventional plating bath design.” Col. 6, lines 15-16. Rather than having the plating reservoir 1 and/or plating tool 4 being configured to provide any removal of at least a portion of one or more byproducts, Belongia discloses a recycling system 11 having an oxidation unit 12 that converts “organic contaminant species to their breakdown products” (col. 6, lines 28-34) and an organic scavenger that removes “residual or breakdown components not removed in oxidation unit 12” (col. 8, lines 12-14). Accordingly, the rejection of claim 1 should be withdrawn.

Turning now to claim 53, nothing in Belongia discloses “removing at least a portion of the at least one byproduct . . . in at least one of the first and second processing vessels,” as recited in that claim. For reasons similar to those discussed above in connection with claim 1, Applicants respectfully submit that the rejection of claim 53 based on Belongia should be withdrawn.

Regarding claim 38, Applicants respectfully submit that the rejection should be withdrawn because Belongia does not teach or suggest a second processing vessel “arranged such that the inlet of the second processing vessel is lower than the inlet of” a first processing vessel, as recited in claim 38. As with claims 1 and 53, Applicants assume that the Examiner relied on reference numerals 1 and 4 of Belongia for the

asserted disclosure of the first and second processing vessels, respectively.¹ Although Belongia at col. 6, lines 12-15 mentions gravity as an option for feeding fluid from an outlet 2 of a plating reservoir 1 to a plating tool 4, there is no disclosure of the relative arrangement of the inlets for the reservoir 1 and tool 4. Even if plating reservoir 1 feeds plating tool 4 by gravity, Applicants respectfully submit that nothing in Belongia discloses an inlet of plating tool 4 arranged lower than an inlet of plating reservoir 1, or vice versa. As discussed in the Amendment filed on September 22, 2003, Fig. 1 of Belongia is merely a schematic illustration of items and there is nothing in the reference that provides any indication that Fig. 1 shows the relative vertical positions of any of those items. Accordingly, Applicants respectfully submit that the rejection of claim 38 should be withdrawn.

For the reasons discussed above, the § 102(e) rejections applied to claims 1, 38, and 53 should be withdrawn. Since the other claims rejected under 35 U.S.C. § 102(e) depend from one of those claims, the rejections applied to the dependent claims should also be withdrawn.

Claim Rejections Under 35 U.S.C. § 103(a)

Claims 6-10, 16-21, 26, 32-37, 41, 42, 46, 47, 51, 56, 57, 61, 62, and 64-72 were rejected under 35 U.S.C. § 103(a) based on Belongia in combination with U.S. Patent No. 6,299,753 to Chao et al. ("Chao") and/or U.S. Patent No. 4,025,426 to Anderson et

¹ Applicants base this assumption on the REMARKS section of the Office Action dated December 2, 2003, pages 13 and 14. If the Applicants' assumption is incorrect, Applicants respectfully request that the Examiner clarify this issue in writing and make any subsequent Office Action non-final. Further, if claim 53 is being rejected for the same reasons set forth in the Office Action dated June 20, 2003, the Amendment filed on September 22, 2003, explains why such a rejection is improper.

al. ("Anderson"). These claims depend from one of claims 1, 38, and 53 and should therefore be allowable for at least the same reasons claims 1, 38, and 53 are allowable.

Furthermore, Applicants respectfully submit that these claims should be allowable because the Office Action fails to set forth a *prima facie* showing of obviousness. To establish a *prima facie* case of obviousness, three basic criteria must be satisfied. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify a reference or to combine references. Second, there must be a reasonable expectation of success. Third, the prior art reference (or references when combined) must teach or suggest all of the claim elements and limitations. See M.P.E.P. § 2143. Moreover, the requisite teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in Applicants' disclosure. See *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991) and M.P.E.P. § 706.02(j).

Applicants respectfully submit that the Office Action fails to establish all of the prongs of the multi-part test noted above. In particular, the Office Action does not set forth a proper motivation or suggestion to combine reference teachings and such motivation or suggestion is not set forth in the cited references or elsewhere.

For example, Applicants respectfully submit that there is no motivation in the references to modify plating reservoir 1 and/or plating tool 4 of Belongia with carbon containers 18, 20, 21, and 22 of Anderson, as the Examiner has apparently proposed. The asserted motivation set forth in the Office Action (e.g., "because Anderson et al. teach that the processing vessels have their inlets near the top and their outlets near

the bottom . . . which would have facilitated flow of fluid quickly and easily from one vessel to the next”) appears to be based solely on improper hindsight reasoning. Anderson teaches an apparatus and method using activated carbon to remove impurities from liquids. In contrast, Belongia’s plating reservoir 1 and plating tool 4, which the Examiner has apparently cited for the asserted disclosure of first and second processing vessels, are part of a “conventional plating bath design” (col. 6, lines 15-16). Since conventional plating bath reservoirs and plating tools are not usually arranged to perform removal of impurities, there would have been no reason to combine Belongia’s conventional plating bath reservoir 1 and/or plating tool 4 with Anderson’s impurity removal apparatus. Furthermore, contrary to the Examiner’s apparent assertions, Anderson appears to be focused on an arrangement where liquid “**drips**” and “**trickles**” (col. 5, lines 11-25; emphasis supplied), rather than being arranged to “facilitat[e] flow of fluid quickly and easily from one vessel to the next,” as asserted in the Office Action at page 12. Consequently, there is no motivation to combine Belongia and Anderson in the manner proposed in the Office Action, and the Office Action does not establish a *prima facie* case of obviousness.

In addition, there is no motivation to combine the teachings of Belongia and Chao. The asserted motivation set forth in the Office Action (e.g., “because Chao et al. teach of degassing vessels which are configured to remove gas in the plating substance . . .” and “because Chao et al. teach that the purification system includes a level detector . . .”) also appears to be based solely on improper hindsight reasoning. In particular, there is nothing that would have provided any motivation to modify Belongia’s

conventional plating reservoir 1 and/or plating tool 4 in the manner proposed in the Office Action.

Furthermore, even if such motivation to combine Belongia with Chao did exist, which it does not, gas source 90 of Chao is not configured to remove gas in a plating substance, as apparently asserted by the Examiner in the Office Action at page 10. Instead, gas source 90 pressurizes reservoirs 58 and 60 with a gas, such as nitrogen, in order to cause fluid flow therefrom. Chao, Abstract and col. 5, lines 17-20. Nothing in Chao teaches gas source 90 as being configured to remove gas in a plating substance, as asserted in the Office Action.

Finally, the assertions at page 12 of the Office Action concerning the Section 103 rejections applied to claims 10, 20, 21, 36, 37, 42, and 47 (“depend on the total scale” and “obvious engineering design improvement”) reflect unsupported speculation and improper hindsight reasoning that lack any support in the references.² Such practice runs counter to the current state of the law on obviousness. For example, the U.S. Court of Appeals for the Federal Circuit (the Federal Circuit) has explained that

[a]n examiner’s conclusory statements . . . do not adequately address the issue of motivation to combine. This factual question of motivation is material to patentability, and [can] not be resolved on subjective belief and unknown authority. It is improper, in determining whether a person of ordinary skill would have been led to [a] combination of [teachings], simply to “[use] that which the inventor taught against its teacher.”

² In addition, the Examiner’s comments in the rejection of claims 20 and 36 reflect an apparent misunderstanding of the subject matter of those claims.

In re Lee, 277 F.3d 1338, 1343-44, 61 U.S.P.Q.2d (BNA) 1430 (Fed. Cir. 2002) (quoting W.L. Gore v. Garlock, Inc., 721 F.2d 1540, 1553, 220 U.S.P.Q. (BNA) 303, 312-13 (Fed. Cir. 1983)). Applicants respectfully submit that, contrary to the Federal Circuit's express guidance, the Office Action uses Applicants' own teachings against them. For at least the reasons set forth above, Applicants respectfully request that the Examiner withdraw the § 103(a) rejections and allow the pending claims.

Conclusion

Applicants submit that the present application should be in condition for allowance. If a conversation might advance prosecution, the Examiner is invited to call the undersigned (202-408-4157).

If the Examiner maintains the claim rejections under 35 U.S.C. §103(a) based on the unsupported assertions discussed above, Applicants respectfully request that the Examiner supply a personal affidavit supporting those assertions so that Applicants will be able to respond in kind. (See 37 C.F.R. §104(d)(2).) Applicants request such an affidavit since, as mentioned above, it appears that the Examiner is relying on hindsight and the teaching of Applicants' own disclosure in an attempt to supply motivation and reasonable expectation of success in the claim rejections.


The Office Action contains numerous statements reflecting characterizations about the invention(s), the claims, and the related art with which Applicants do not necessarily agree. Regardless of whether any such statement or characterization is discussed above, Applicants decline to subscribe to any statement or characterization in the Office Action.

If any additional fees are due in connection with the filing of this response, please charge the fee to our Deposit Account No. 06-0916. If an extension of time under 37 C.F.R. § 1.136 is required and is not accounted for above, such extension is requested and the fee should also be charged to our Deposit Account.

Respectfully submitted,

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Dated: April 2, 2004

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